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Control Room	576-1503
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HFIR	
Control Room	574-7035
RCT Support (radiation control technician)	574-6713
User Office	574-4523

SNS Café, Bldg 8600

Breakfast hours: M–F, 7:00 am – 9:30 am
Lunch hours: M–F, 10:45 am – 1:15 pm

HFIR Canteen, Bldg 7910

Lunch hours: M–F, 10:45 am – 1:15 pm

For questions or comments email us:
neutrons@ornl.gov

Research Spotlight

Using the 30 T magnet at SEQUOIA to probe materials in extreme environments

Frustrated magnets have many competing ground states. The spin structure of these ground states can be teased out by using neutron diffraction at various magnetic fields. In TbB₄, a triangle-based spin lattice, magnetization measurements at fields of up to 30 tesla show many plateaus that indicate different spin structures. An international collaboration is at SEQUOIA, using the instrument in diffraction mode and a pulsed magnet under an extreme magnetic field of 30 T, to elucidate the structures in TbB₄. The research is important to DOE's interest in the behavior of materials under extreme environments. "The fields required to probe these states are beyond what steady state magnets can do," says Garrett Granroth, lead instrument scientist on SEQUOIA. "At this time, the pulsed magnet is the only way in the world to access these field regimes for neutron diffraction. The beam position on SEQUOIA can be moved to match the sample position. Furthermore, multiple pixels at angles down to 2.5° allow for easy measurement of magnetic signals." Collaborating are H. Nojiri, S. Yoshii, T. Morioka (Tohoku University) B. D. Gaulin, K. A. Ross (McMaster University), G. E. Granroth, M. Matsuda, L. Debeer-Shmidt, and L. Santodonato (ORNL NScD).

This Week's Users

SNS, NOMAD (BL1B)

Wojciech Dmowski (Univ Tenn)
Wei Guo (Univ Tenn)
Takeshi Egami (Univ Tenn)
Joerg Neufeld (ORNL NScD)
Thomas Shea (ORNL NScD)

SNS, BASIS (BL2)

Steven Overbury (ORNL PSD)
Daniela Anjos (ORNL PSD)
Eugene Mamontov (ORNL NScD)

SNS, SNAP (BL3)

Christopher Tulk (ORNL NScD)

SNS, Magnetism Reflectometer (BL4A)

Tao Zhu (Chinese Academy of Science)
Elisabeth Josten (Juelich)
Stefan Mattauch (Juelich)
Hailemariam Ambaye (ORNL NScD)
Valeria Lauter (ORNL NScD)

SNS, Liquids Reflectometer (BL4B)

Zuleikha Kurji (CA Institute of Tech)
Paul Pirogovsky (CA Institute of Tech)
Ketki Sharma (Georgia Institute of Tech)
Costas Tsouris (ORNL E&ESD)
Artemis Ailianou (CA Institute of Tech)
Ladan Lynn Foose (CA Institute of Tech)
John Ankner (ORNL NScD)

SNS, NCNS (BL-5)

Kazuaki Iwasa (Tohoku Univ)
Kotaro Saito (Tohoku Univ)
Pengcheng Dai (Univ Tenn)
Oliver Lipscombe (Univ Tenn)
Miaoyin Wang (Univ Tenn)

SNS, EQ-SANS (BL6)

Bradley Forney (Univ of Iowa)
Allan Guymon (Univ of Iowa)
Kristan Sorenson (Univ of Iowa)
Ben Butler (UC Berkeley)
Jamie Messman (ORNL CNMS)
William Heller (ORNL NScD)

SNS, VULCAN (BL7)

M. Rawlings (Northwestern Univ)
Shenyang Huang (Univ Tenn)
Peter Liaw (Univ Tenn)
Zhiqian Sun (Univ Tenn)
Gongyao Wang (Univ Tenn)
Ke An (ORNL NScD)

SNS, POWGEN (BL11A)

Colin Blakely (Michigan St Univ)
Viktor Poltavets (Michigan St Univ)
Stephen Skinner (Imperial College)
Miguel Laguna-Bercero (Universidad de Zaragoza)
Loic Baggetto (ORNL PSD)
Jason Hodges (ORNL NScD)
Ashfia Huq (ORNL NScD)

SNS, TOPAZ (BL12)

Jason Gardner (Indiana Univ)
Ross Stewart (ISIS)
Tim Gruene (Georg-August Univ)
Arthur Schultz (Argonne Nat'l Lab)
Georg Ehlers (ORNL NScD)
Matthias Frontzek (ORNL NScD)
Christina Hoffmann (ORNL NScD)
Flora Meilleur (ORNL NScD)
Matthew Frost (ORNL NScD)
Xiaoping Wang (ORNL NScD)

SNS, SEQUOIA (BL17)

Garrett Granroth (ORNL NScD)
Eugene Mamontov (ORNL NScD)
A. Kolesnikov (ORNL NScD)
Suresh M Chathoth (ORNL NScD)

SNS, ARCS (BL18)

Brent Fultz (CA Institute of Tech)
Chen Li (CA Institute of Tech)
Hillary Smith (CA Institute of Tech)
Glenn Garrett (CA Institute of Tech)
Matthew Lucas (ORNL NScD)
Douglas Abernathy (ORNL NScD)

HFIR, Cold TAS (CG-4C)

Maiko Kofu (Univ of Tokyo)
 Osamu Yamamuro (Univ of Tokyo)
 Atsushi Nagoe (Univ of Tokyo)
 Jie Ma (ORISE)
 Tao Hong (ORNL NScD)
 Olivier Delaire (ORNL NScD)

HFIR, TAS (HB-1)

Chenglin Zhang (Univ Tenn)
 Masa Matsuda (ORNL NScD)
 Wei Tian (ORNL NScD)
 Andrew Christianson (ORNL NScD)
 Jerel Zarestky (ORNL NScD)
 Tao Hong (ORNL NScD)
 Xianglin Ke (ORNL NScD)
 Stephen Nagler (ORNL NScD)

HFIR, TAS (HB-1A)

Jiaqiang Yan (Univ Tenn)
 Stuart Calder (ORISE)
 Mark Lumsden (ORNL NScD)
 Andrew Christianson (ORNL NScD)
 Cuihuan Wang (ORNL NScD)
 Vasile Garlea (ORNL NScD)
 Douglas Abernathy (ORNL NScD)
 Matthew Stone (ORNL NScD)

HFIR, Powder Diffractometer (HB-2A)

Ovi Garlea (ORNL NScD)
 Clarina dela Cruz (ORNL NScD)

HFIR, TAS (HB-3)

Stuart Calder (ORISE)
 Brian Sales (ORNL MSTD)
 Stephen Nagler (ORNL NScD)
 Mark Lumsden (ORNL NScD)
 Andrew Christianson (ORNL NScD)
 Cuihuan Wang (ORNL NScD)
 Karol Maty (ORNL NScD)

HFIR, Four Circle Diffractometer (HB-3A)

Grigoreta Stoica (ORNL NScD)
 Alexandru Stoica (ORNL NScD)
 Huibo Cao (ORNL NScD)

Local Happening

6/13-17/2011 – U.S. National School on Neutron and X-ray Scattering

Multiple speakers daily at Bldg. 8600, Rm A-103 (Iran Thomas Auditorium).

Schedule:

Monday, June 13:

8:30-10:45 am: Interactions of X-rays & Neutrons with Matter III-IV, Sunil Sinha, University of California San Diego

11am -12 noon: Single Crystal Diffraction, Art Schultz, Argonne National Laboratory

3:30-4:40 pm: Inelastic Neutron Scattering I, Bruce Gaulin, McMaster University

Tuesday, June 14

8:30-9:30 am: Inelastic Neutron Scattering II, Bruce Gaulin, McMaster University

9:45-10:45 am: Neutron Polarization, Chuck Majkrzak, National Institute of Standards and Technology

11 am-12 noon: Magnetic Scattering, Bruce Gaulin, McMaster University

3:30-4:30 pm: Quasi-elastic Neutron Scattering, Ken Herwig, Oak Ridge National Laboratory

Wednesday, June 15:

8:30-9:30 am: Reflectivity, Chuck Majkrzak, National Institute of Standards and Technology

9:45-10:45 am: Small Angle Scattering, Volker Urban, Oak Ridge National Laboratory

11 am-12 noon: Materials Engineering, Tom Holden, Northern Stress Technologies

Thursday, June 16:

8:30-9:30 am: Neutron Generation and Detection, Jack Carpenter, Argonne National Laboratory

9:45-10:45 am: Applications of Small Molecule Crystallography, Alicia Beatty, University of Missouri, St. Louis

11 am-12 noon: Neutron Sources, Jim Rhyne, Los Alamos National Laboratory

Friday, June 17:

8:30-9:30 am: Powder Diffraction Applications, Ashfia Huq, Oak Ridge National Laboratory

9:45-10:45 am: Diffuse Scattering, Gene Ice, Oak Ridge National Laboratory

11 am-12 noon: Micro-Diffraction, Gene Ice, Oak Ridge National Laboratory

6/16/2011 – Seminar

Product Discovery and Problem Solving in the Hydrocarbon Industry through Neutron Scattering, Dr. Hubert King, Exxon Mobil Research and Engineering, Bldg. 8600, C-156, 11:00 AM-12:00 PM

6/16/2011 – Seminar

Accelerator Seminar: BOY, A Modern Graphical Operator Interface Editor and Runtime, Xihui Chen, Bldg. 8600, C-250, 1:00-2:00 PM